

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for enabling ~~a client to access to~~ a resource on a wide area network environment, the wide area network environment including a plurality of server array controllers, each server array controller having at least one corresponding server, the method comprising:

(a) receiving a request for a domain name resolution from a requestor, the resource from a connection that is associated with the client;

(b) selecting a method for load balancing each request from the connection performing a mathematical conversion of the requestor's Internet Protocol (IP) address to produce a result, wherein the mathematical conversion is based, in part, on a number of available servers associated with the plurality of server array controllers;

(c) employing the selected method result of the mathematical conversion to select one of a target server array controller from the [[a]] plurality of server array controllers to handle [[each]] the request from the connection to the resource; [[and]]

(d) sending a response to the requestor, the response including an address of the target server array controller;

(e) receiving at least one subsequent request from the requestor for the domain name resolution; and

(f) in response to each subsequent request from the requestor, sending a corresponding response including the address of the target server array controller to the requestor.

~~persistently referring each request associated with the connection to the selected server array controller until another method is selected for load balancing each request from the connection, wherein the selected server array controller associates the client's connection with the requested resource.~~

2. (Currently Amended) The method of Claim 1, wherein the ~~client~~ requestor is a local domain name system (LDNS) server.

3. (Currently Amended) A method for enabling a client to access a resource on a wide area network environment, comprising:

(a) receiving a request for the resource from a connection that is associated with the client;

(b) selecting a method for load balancing each request from the connection, The method of Claim 2 wherein the selected load balancing method employs modulus arithmetic to select a virtual server managed by the selected server array controller, including:

[[a)] converting the LDNS server's IP address into a first value;

[[b)] dividing the first value by the total amount (N) of virtual servers that are available, each available virtual server corresponding to a particular value of N;

[[c)] adding one to a remainder of the dividing action to create a second value; and

[[d)] selecting the virtual server that corresponds to the particular value of N that is one greater than the second value;

(c) employing the selected method to select one of a plurality of server array controllers to handle each request from the connection to the resource; and

(d) persistently referring each request associated with the connection to the selected server array controller until another method is selected for load balancing each request from the connection, wherein the selected server array controller associates the client's connection with the requested resource.

4. (Original) The method of Claim 3, further comprising when the selected virtual server is determined to be down, the selected load balancing method performs further actions, including:

(a) marking the down selected virtual server as unavailable;

(b) decrementing the total amount of available virtual servers by 1 to create a new value for N; and

(c) employing the new value for N to select another virtual server array.

5. (Currently Amended) The method of Claim 1, wherein the ~~client requestor employs a proxy server to send the request~~ communicates with a client through a web proxy for the resource.

6. (Canceled)

7. (Currently Amended) The method of Claim 1, wherein the ~~selected~~ target server array controller associates the ~~client~~ requestor with a virtual server that includes the ~~requested~~ resource, wherein the virtual server is managed by the ~~selected~~ target server array controller.

8. (Original) The method of Claim 1, further comprising storing information associated with the request.

9. (Currently Amended) The method of claim [[9]] 8, wherein the information includes an IP address associated with the ~~client~~ requestor, another IP address associated with the server array controller, ~~a time stamp~~, and a time-to-live time value for controlling how long information is valid.

10. (Currently Amended) The method of Claim 1, wherein each subsequent request ~~associated with the connection~~ is made by any one of a plurality of LDNS servers.

11. (Currently Amended) The method of claim 1, wherein the ~~selected~~ target server array controller manages at least one virtual server that provides access to the ~~requested~~ resource.

12. (Canceled)

13. (Currently Amended) A method for enabling a client to access a resource on a wide area network environment, the wide area network environment including a plurality of server array controllers, each server array controller having at least one corresponding server, the method comprising:

(a) employing an extended domain name system (EDNS) server to load balance a request from a requestor, from a connection using a mathematical conversion of an IP address associated with the ~~client~~ requestor for handling by a selected server array controller, each subsequent and timely request from the ~~connection~~ requestor is persistently referred by the EDNS server for handling by to the selected server array controller, wherein the requestor is a local domain name (LDNS) server, and wherein the mathematical conversion is based, in part, on a number of available servers associated with the plurality of server array controllers; and

(b) when ~~[[the]]~~a subsequent request is untimely, employing the EDNS server to load balance the subsequent request ~~from the connection for handling by another selected server array controller.~~

14. (Original) The method of Claim 13, wherein the EDNS server includes a data store for storing information associated with the request.

15. (Canceled)

16. (Canceled)

17. (Original) The method of claim 14, further comprising another EDNS server that includes another data store for storing information associated with the request, wherein the EDNS and the other EDNS share request information between the data store and the other data store.

18. (Currently Amended) A modulated data signal including computer executable instructions for enabling access to a resource on a wide area network environment, the wide area network environment including a plurality of server array controllers, each server array controller having at least one corresponding server, comprising:

(a) a receiver that receives a request ~~for resources~~ for a domain name resolution from a connection that is associated with ~~the client~~ a local domain name (LDNS) server;

(b) a selector that selects a method for load balancing each request ~~from the connection~~ using a mathematical conversion of the LDNS server's IP address that is based, in part, on a number of servers associated with the plurality of server array controllers, and employs the selected method to select a server array controller to handle each request ~~from the connection~~;

(c) a sender that refers each request ~~associated with the connection~~ to the selected server array controller until another method is selected for load balancing each request ~~from the load balanced connection~~, wherein persistent communication is established between the ~~client~~ LDNS server and the server.

19. (Currently Amended) An apparatus for providing persistent communication between a client and a server in a wide area network environment, the wide area network environment including a

plurality of server array controllers, each server array controller having at least one corresponding server, comprising:

(a) means for receiving a request ~~for resources~~ a domain name resolution from a connection that is associated with the client, the client being a local domain name (LDNS) server;

(b) means for selecting a method for load balancing each request from the connection using a mathematical conversion means for converting the LDNS server's IP address, wherein the mathematical conversion is based, in part, on a number of servers associated with the plurality of server array controllers;

(c) means for employing the selected method to select a server array controller to handle each request from the connection; and

(d) means for persistently referring each request associated with the connection to the selected server array controller until another method is selected for load balancing each request from the connection.

20. (Currently Amended) A computer data signal embodied in a carrier wave and representing computer executable instructions for providing persistent communication between a client and a server in a wide area network environment, the wide area network environment including a plurality of server array controllers, each server array controller having at least one corresponding server, comprising:

(a) receiving a request ~~for resources~~ for a domain name resolution from a connection that is associated with the client;

(b) selecting a method for load balancing each request from the connection using a mathematical conversion of an IP address of the client, wherein the mathematical conversion is based, in part, on a number of servers associated with the plurality of server array controllers;

(c) employing the selected method to select a server array controller to handle each request from the connection; and

(d) persistently referring each request associated with the connection to the selected server array controller until another method is selected for load balancing each request from the connection.

21. (Currently Amended) A computer-readable medium storing instructions causing a computer program to execute a computer process for providing persistent communication between a client and a server in a wide area network environment, the wide area network environment including a plurality of server array controllers, each server array controller having at least one corresponding server, comprising:

- (a) receiving a request for a domain name resolution ~~resources~~ from a connection that is associated with the client;
- (b) selecting a method for load balancing each request from the connection, using a mathematical conversion of an IP address of the client, wherein the mathematical conversion is based, in part, on a number of servers associated with the plurality of server array controllers;
- (c) employing the selected method to select a server array controller to handle each request from the connection; and
- (d) persistently referring each request associated with the connection to the selected server array controller until another method is selected for load balancing each request from the connection.

22. (Canceled)

23. (New) The method of Claim 1, wherein the requestor is a local domain name system (LDNS) server, the request is associated with a first client, and at least one of the subsequent requests is associated with a second client.

24. (New) The method of Claim 1, wherein a first server receives the request and sends the response, and a second server receives at least one of the subsequent requests and sends the response corresponding to the at least one subsequent request.

25. (New) The method of Claim 1, wherein a first DNS resolver receives the request and sends the response, and a second DNS resolver receives at least one of the subsequent requests and sends the response corresponding to the at least one subsequent request, further comprising sharing connection data between the first server and the second server.

26. (New) The method of Claim 1, wherein a first DNS resolver receives the request and sends the response, and a second DNS resolver receives at least one of the subsequent requests and sends the response corresponding to the at least one subsequent request, further comprising sharing persistent connection data between the first DNS resolver and the second DNS resolver.

27. (New) The method of Claim 1, further comprising:

- (a) based on the result of the mathematical conversion, selecting a server;
- (b) based on the selected server, selecting the target server array controller.

28. (New) The method of Claim 1, wherein the mathematical conversion comprises performing modulus arithmetic to produce the result, the modulus arithmetic based on the number of servers corresponding to the plurality of server array controllers.

29. (New) The method of Claim 1, further comprising:

- (a) converting the requestor's IP address into a first value;
- (b) performing modulus arithmetic based on the first value and a total amount of virtual servers that are available;
- (c) selecting a virtual server based on the modulus arithmetic; and
- (d) selecting the server array controller corresponding to the selected virtual server to be the target server array controller.

30. (New) The method of claim 9, further comprising, in response to receiving the at least one subsequent request from the requestor, based on the time value, selectively load balancing the additional request among the plurality of server array controllers.

31. (New) The method of claim 9, further comprising dynamically determining the time value.

32. (New) The method of claim 9, further comprising dynamically determining the time value based, at least in part, on a time of day.

33. (New) An apparatus for providing persistent communication between a client and a server in a wide area network environment, the wide area network environment including a plurality of server array controllers, each server array controller having at least one corresponding server, comprising:

(a) a network device that receives a request for a domain name resolution from a local domain name (LDNS) server associated with the client;

(b) a means for load balancing the request from the LDNS using a mathematical conversion of the LDNS server's IP address, wherein the mathematical conversion is based, in part, on a number of servers associated with the plurality of server array controllers, wherein the means for load balancing includes selecting a server array controller to handle a content request from the client; and

(c) a means for persistently referring each request associated with the connection to the selected server array.